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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/079,949	02/19/2002	Ebrahim Zandi	13761-7064	6542

38706 7590 04/21/2006

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EXAMINER	
PROUTY, REBECCA E	
ART UNIT	**PAPER NUMBER**
1652	

DATE MAILED: 04/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/079,949	ZANDI ET AL.	
	Examiner	Art Unit	
	Rebecca E. Prouty	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,5-7,17-19 and 21-41* is/are pending in the application.

4a) Of the above claim(s) *24-41* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,5-7,17-19 and 21-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. *4/06*.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/27/06 has been entered.

Claims 1, 3, 4, 8-16, and 20 have been canceled. Claims 2, 5-7, 17-19, and 24-4 are still at issue and are present for examination.

Applicants' arguments filed on 1/27/06, have been fully considered and are deemed to be persuasive to overcome some of the rejections previously applied. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn.

Claims 24-41 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse the response filed 10/4/04.

Claim 2 is objected to because of the following informalities: "function" in line 5 should be "functional". Appropriate correction is required.

Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 (upon which claim 6 depends) is confusing in the recitation of "said IKK subunit gene further comprises a tag" and as genes cannot comprise peptide tags. It is suggested that Claim 5 be amended to recite "said IKK subunit gene further comprises a sequence encoding a tag".

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, 5-7, 17-19, and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Li et al or

Rothwarf et al. (Reference C27 of Applicant's PTO-1449) in view of Traincard et al. and Epinat et al.

Each of Li et al. and Rothwarf et al. teach the coexpression of IKKα, IKKβ and IKKγ genes in a eukaryotic host by inserting the genes encoding each subunit fused to a tag (HA, FLAG or c-myc) into a mammalian expression vector, growing the host cell, lysing the host cell, and immuno-precipitating the IKK complexes. The only difference in the methods taught by Li et al. and Rothwarf et al. to the methods of the instant claims is that in the instant claims the expression host used is yeast.

Traincard et al. teach that within eukaryotic organisms, no homologs of any of member of the NF-κB signaling system (clearly disclosed as including Rel/NF-κB subunit genes, IκB subunit genes and IKK genes) has been found within the genomes of *C. elegans* or *Saccharomyces cerevisiae* both of which were fully sequenced genomes at the time of publication of Traincard et al.

Epinat et al. teach that yeast is a convenient host for the reconstitution of the NF-κB system since it does not contain any endogenous NF-κB activity (see page 603) and that the reconstituted system provides an easy assay for testing stimuli or specific proteins that are postulated to be involved in NF-κB signaling (see page 609). Epinat et al. further suggest that yeast lack any endogenous IKK activity (see Figure 4 and page

609) and teach expression vectors for the recombinant expression of genes involved in the NF-κB signaling pathway in yeast cells under the control of both constitutive promoters such as the *ADH1* promoter and inducible promoters such as the *GAL1* promoter. The yeast expression vectors comprise selection markers such as the *URA3* or *LEU2* genes.

As the IKK complex is well known to be the part of the NF-κB signaling pathway responsible for IκB phosphorylation and as both Traincard et al. and Epinat et al. clearly suggest that yeast lack any endogenous IKK activity (as Traincard et al. teach that no IKK homologous genes were found in the yeast genome and Epinat et al. showed that an expressed IκB protein could not be phosphorylated in yeast even under similar stimuli to those known to induce IκB phosphorylation in mammals) and as yeast are well known in the art to be the workhorse organism for the expression of eukaryotic proteins of interest, it would have been obvious to one of ordinary skill in the art to reconstitute the IKK complex in a yeast host cells by expressing the IKK subunit genes of Li et al. or Rothwarf et al. in yeast using any known yeast expression vector or yeast expression vectors as taught by Epinat et al.

Applicants argue that while the cited prior art teaches the reconstitution of IKK complexes in mammalian systems, the

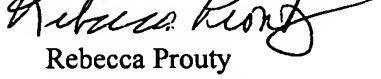
claimed invention is to the reconstitution of IKK complexes in yeast and that the combination of references fails to render obvious the amended claims because the combination fails to teach or suggest a method for reconstituting substantially homogenous IKK protein complex comprising at least the IKKγ subunit. Applicants argue that mammalian and insect systems as taught in the art do not form substantially homogenous complex because the exogenous IKK gene products complex with endogenously produced IKK gene products. However, this is not persuasive as the cited art clearly would have led a skilled artisan to reasonably expect that similar complications would not occur in yeast as the art leads a skilled artisan to conclude that yeast do not endogenously produce IKK proteins. As discussed above, Traincard et al. point out that no homologs of any mammalian NF-κB signaling pathway proteins including Rel/NF-κB subunit genes, IκB subunit genes and IKK genes were found in the *C. elegans* or *Saccharomyces cerevisiae* genomes, both of which were fully sequenced genomes at the time of publication of Traincard et al. while homologs of these proteins have been found in other eukaryotic species (including insects). Furthermore, Epinat et al. clearly attempted to recreate conditions under which an expressed IκB protein would expected to be phosphorylated in yeast (i.e., stimulation of yeast under

similar conditions to those that induce IκB phosphorylation in mammals) if an IKK kinase were present but could not do so showing that at least under all the conditions tested the yeast do not endogenously produce an IKK and in combination with the disclosure of Traincard et al. clearly leading a skilled artisan to believe that these proteins are in fact not present in yeast at all. As such a skilled artisan would not expect that reconstitution of the IKK complex in yeast would lead to incorporation of endogenously present IKK subunits into the recombinant complex.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rebecca E. Prouty whose telephone number is 571-272-0937. The examiner can normally be reached on Tuesday-Friday from 8 AM to 5 PM. The examiner can also be reached on alternate Mondays

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapura Achutamurthy, can be reached at (571) 272-0928. The fax phone number for this Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Rebecca Prouty
Primary Examiner
Art Unit 1652

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: discussed current response filed with applicants RCE in which applicants argue that the art previously cited fails to suggest a method for reconstituting substantially homogenous IKK protein complex as mammalian and insect systems as taught in the art do not form substantially homogenous complex because the exogenous IKK gene products complex with endogenously produced IKK gene products. However the examiner stated that after further searching the art that she has a reference (Traincard et al.) which clearly suggests that endogenous IKK genes are lacking in yeast. As such yeast would not be expected to incoporate endogenous IKK subunits into a recombinantly produced complex..